Methodology for Developing Final Assessment Priority Maps

Three different methodologies were presented at the initial State Assessment of Forest Resources (SAFR) Stakeholder meeting in October, 2008.

Methodology 1: Combining independent assessment from various landowner organizations

The first methodology would gather prioritization assessment from all major stakeholder groups in Idaho, including the Forest Stewardship Spatial Analysis Project (SAP), US Forest Service, Idaho Department of Lands Endowment Land assessment, BLM, tribal assessments, Fish and Game, etc. These would be placed on a map and an overall prioritization developed where multiple high priority areas from each assessment were contiguous. This was discarded for two reasons. First, how are areas addressed where there have been no assessments completed? Second, the likelihood is high that the issues upon which each independent assessment is based would be different, making analysis difficult to understand and challenging to describe.

Methodology 2: Weighted overlay.

This is among the most common geospatial methods of prioritization and that which was used in the SAP analysis mentioned above. For this assessment, the issues and they way they were developed may have remained the same. Then, stakeholders would have ranked these by relative importance, giving a numerical score for each such that the total of scores for all issues equaled 100. Then, scores from all stakeholders are averaged to arrive at a final weighting. The value in each cell for each issue is multiplied by the "weighted" score assigned to it. The weights each issue will receive depends significantly on who submits scores, and can be skewed if, say, a particular profession is over or under represented. It may also have the effect of placing greater emphasis on either threat of benefit issues. For instance, the highest weights may be assigned to issues that threaten forests. The end result may be prioritization on areas that are at high risk, but for which relative benefits may vary widely.

## Methodology 3: Threats/Benefits Matrix

The third methodology presented, and the one chosen is a threats/benefit matrix. The key forestry related issues identified by the Assessment stakeholders and further refined by the Core Guidance Team are categorized into two groups. The first included those issues which threaten forests—Forest Health Threats, Risk to Communities and Ecosystems from Uncharacteristic Wildfire, and Potential Loss of Forests and Canopy from Development and Recreation Pressures. The second major group includes those issues for which forests and trees provide benefit—Wildlife and Biodiversity, Water Quality and Quantity, Air Quality, and

Sustainable Forest-Based Markets. Each of these issues is considered equal and all have scores that range from 0 through 5, from no threat to high threat, and from no benefit to high benefit.

The values for each 30 meter cell in each of the "threats" issues are added together. The scores for all cells are then stratified into five classes using natural breaks. This composite threats map identifies the least threatened through the most threatened per the issues and sub-issues used in the assessment.

The same is done for the "Benefits" issues to develop a Composite Benefits map. This map shows areas with the least benefit through those with the greatest benefits as identified in the issues and sub-issues used in the assessment.

The final State Assessment of Forest Resources priority map is developed by adding the composite threats data scores to the composite benefits map. This is done is such a way that 25 unique values are calculated, resulting in a five by five matrix.
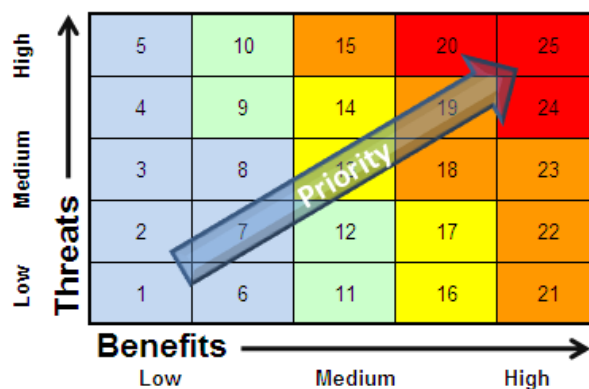
The 25 unique scores represent a combination of threat level and benefit value, and can be grouped into four categories of priority. The lowest priority areas are those that are low threat and low benefit. The highest priority are those areas which are both high threat and high benefit. From this point, stakeholders can make decisions on the relative priority of various combinations of low to high threats coupled with combinations of low to high benefit. The example above is one possible way cells can be grouped into one of four categories of priority. Priority areas in which to focus will be those colored with either red, orange and potentially down into yellow.

Masks

Last, the final map has areas masked out. These included wilderness areas—these were areas that lacked data from a number of the issues and sub-issues, and where management activities would be unlikely. Areas that received less than 10" of precipitation each year were also masked out, as these are unsuitable for growing trees. However, 6th order sub-watersheds that included a city boundary were unmasked, as these are unnatural environments where trees can survive and where they may play a more important role. The masks are transparent, so viewers can see the scores of the underlying sub-watersheds.